

Appln. No. 10/686,458
Amendment dated September 2, 2005
Reply to Office Action dated June 2, 2005

Remarks/Arguments

The foregoing amendments and these remarks are in response to the Office Action, dated June 2, 2005. This Amendment is timely filed.

At the time of the Office Action, claims 7 and 21-31 were pending in the application. Claims 7 and 27 were rejected under 35 U.S.C. § 103. Claims 21-26 were objected to as being dependent upon a rejected base claim. Claims 28-31 were indicated as being directed to allowable subject matter.

Claims 7 and 21-31 are pending. Claim 7 is amended herein; claims 21-31 remain as previously presented.

Amendment to Claim 7

Before addressing the rejections under 35 U.S.C. § 103, Applicant wishes to explain the amendment to claim 7, as set forth above. In preparing this amendment, Applicant noticed that the recitation of "at least one catalytic module" is not in agreement with the subsequent recitation of "the plurality of catalytic modules." Applicant has corrected the discrepancy by amending claim 7 to recite "at least one catalytic module" throughout.

Art-Based Claim Rejections

Claims 7 and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,729,967 to Joos et al. ("Joos") in view of U.S. Patent No. 4,598,553 to Saito et al. ("Saito"). The Examiner also rejected claims 7 and 27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,609,905 to Eroglu et al. ("Eroglu") in view of Saito. Lastly, the Examiner rejected claims 7 and 27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,588,213 to Newburry ("Newburry") in view of Saito. It is respectfully submitted

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that these various references in combination with Saito do not teach each and every element of the claims of the present application.

As noted in the Office Action, Joos fails to teach each and every element recited in claim 7. Specifically, the Office Action recognizes that Joos does not disclose a vortex forming device that has a plurality of surfaces, a substantial majority of which are substantially oblique to the flow path. However, the Office Action suggests that such features are inherent in Joos.

Applicant respectfully disagrees. That a feature "could" be present or "might" be present is insufficient to find that a feature is inherent. To establish inherency, the reference "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." In re Robertson, 169 F.3d 743, 745 (Fed. Cir. 1999)(quoting Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268 (Fed. Cir. 1991)). The inherent feature of the reference "must be consistent, necessary, and inevitable, not merely possible or probable." DONALD S. CHISUM, CHISUM ON PATENTS § 3.02[2][B] (2005). Therefore, it is respectfully submitted that Joos does not inherently disclose a vortex forming device with a plurality of surfaces in which a substantial majority of the surfaces are substantially oblique to the flow.

The Office Action relies on Saito to supply the deficiencies of Joos. As the outset, Applicant submits that the combination of Joos and Saito is not proper. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. Carella v. Starlight Archery, 804 F.2d 135 (Fed. Cir. 1986). Joos and Saito are devoid of any such teaching, suggestion or motivation. Further, as noted in the present application, the substantial majority of oblique

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surfaces not only facilitates vortex formation, but it can also minimize the flame-holding potential of such surfaces. Such a benefit is not recognized in any of the cited references. Thus, the rejection is founded on an improper selective combination features from Joos and Saito made with the benefit of hindsight.

Assuming for the sake of argument that Joos and Saito are properly combinable, the deficiencies of Joos are not supplied by Saito. Saito discloses a swirl burner; it does not disclose a swirl burner with a substantial majority of its surfaces oblique to the flow path. The Office Action presents FIG. 6 of Saito to support the rejection. However, as can be seen in FIG. 6, the swirl burner includes a plurality of air swirling vanes 38 as well as partition plates 42 between the inner and outer cylinder portions 34, 44. The partition plates 42 are certainly within the path of the flow through the swirl burner 9, but it is clear that the partition plates 42 are not oblique to the flow path nor are the cylinder portions 34, 44. When all of the flow path surfaces of Saito are considered, it becomes clear that a substantial majority of the surfaces of the swirl burner are not oblique to the flow path. Moreover, the written description of Saito does not teach or suggest otherwise. Therefore, each and every element of the invention recited in claim 7 is not disclosed in the proposed combination of Joos and Saito.

For all of the reasons set forth above, the other combinations of references (Eroglu-Saito and Newberry-Saito) informally mentioned in the conclusion section of the Office Action fails to teach each and every element recited in claim 7.

In view of the above, Applicant submits that claim 7 has been distinguished from the disclosures of any combination of Joos, Eroglu, Newberry and Saito. Applicant respectfully submits that the rejection of claim 7 has been traversed. Consequently, all claims depending

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from claim 7 – including claim 27 -- are necessarily distinguished over Joos, Eroglu and Newburry.

In light of the above, Applicant respectfully submits that these claims 7 and 27 are in a condition for allowance.

Allowable Claims

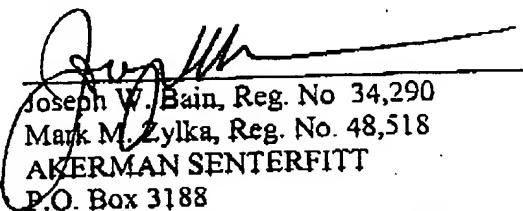
Applicant appreciates the Examiner's indication that claims 28-31 are allowed and that claims 21-26 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

In light of the foregoing, it is respectfully submitted that the objections and rejections set forth in the Office Action have been overcome. Accordingly, Applicant respectfully requests that the Examiner reconsider the claims currently pending in the application; withdraw the rejections under 35 U.S.C. § 103; allow the pending claims; and promptly issue a timely Notice of Allowance.

Respectfully submitted,

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Joseph W. Bain, Reg. No. 34,290
Mark M. Zylka, Reg. No. 48,518
AKERMAN SENTERFITT
P.O. Box 3188
West Palm Beach, FL 33402-3188
Telephone: (561) 653-5000
Facsimile: (561) 659-6313